

CLAIMS

What is claimed is:

1. A method for selecting packets, comprising:
pipelining execution of packet selection processes so that execution of each
of the packet selection processes occurs at different levels of a
scheduling hierarchy; and
selecting at least two different packets at two different times in response to
execution of the packet selection processes.
2. The method of claim 1, wherein each of the packet selection processes
comprises two or more subprocesses executed at different levels of the
scheduling hierarchy to select a packet.
3. The method of claim 2, wherein pipelining execution of the packet selection
processes comprises executing each of the packet selection processes
independent of one another.
4. A method for selecting packets comprising:
initiating a first packet selection process at a first time slot,
initiating a second packet selection process at a second time slot
immediately following the first time slot such that execution of the
second packet selection process overlaps execution of the first packet
selection process at different levels of a scheduling hierarchy;
selecting a first packet at a third time slot in response to the first packet

selection process; and

selecting a second packet at a fourth time slot in response to the second packet selection process, the fourth time slot immediately following the third time slot.

5. The method of claim 4, wherein each of the first packet selection process and the second packet selection process comprises two or more subprocesses executed to select the first packet and the second packet respectively.
6. The method of claim 5, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed in one time slot.
7. The method of claim 6, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed at a different level of the scheduling hierarchy.
8. The method of claim 5, wherein at least one of the subprocesses in the first packet selection process is different from the subprocesses in the second packet selection process.
9. The method of claim 5, wherein when a subprocess is selected by the first packet selection process, it is locked and cannot be selected by the second packet selection process.

10. The method of claim 9, wherein the subprocess is selected from one or more subprocesses at a same level of the scheduling hierarchy by sorting the one or more subprocesses at that level based on a selection criteria.
11. The method of claim 10, wherein the selection criteria is one selected in a group comprising an arrival time and a contracted rate.
12. A computer readable medium having stored thereon sequences of instructions which are executable by a system, and which, when executed by the system, cause the system to:
- initiate a first packet selection process at a first time slot,
 - initiate a second packet selection process at a second time slot immediately following the first time slot such that execution of the second packet selection process overlaps execution of the first packet selection process at different levels of a scheduling hierarchy;
 - select a first packet at a third time slot in response to the first packet selection process; and
 - select a second packet at a fourth time slot in response to the second packet selection process, the fourth time slot immediately following the third time slot.
13. The computer readable medium of claim 12, wherein each of the first packet selection process and the second packet selection process comprises two or more subprocesses executed to select the first packet and the second packet respectively.

14. The computer readable medium of claim 13, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed in one time slot.
15. The computer readable medium of claim 14, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed at a different level of the scheduling hierarchy.
16. The computer readable medium of claim 13, wherein at least one of the subprocesses in the first packet selection process is different from the subprocesses in the second packet selection process.
17. The computer readable medium of claim 13, wherein when a subprocess is selected by the first packet selection process, it is locked and cannot be selected by the second packet selection process.
18. The computer readable medium of claim 17, wherein the subprocess is selected from one or more subprocesses at a same level of the scheduling hierarchy by sorting the one or more subprocesses at that level based on a selection criteria.
19. The computer readable medium of claim 18, wherein the selection criteria is one selected in a group comprising an arrival time and a contracted rate.
20. A system, comprising:

a switch fabric; and

an egress coupled with the switch fabric to:

initiate a first packet selection process at a first time slot,

initiate a second packet selection process at a second time slot

immediately following the first time slot such that execution of the second packet selection process overlaps execution of the first packet selection process at different levels of a scheduling hierarchy;

select a first packet at a third time slot in response to the first packet selection process; and

select a second packet at a fourth time slot in response to the second packet selection process, the fourth time slot immediately following the third time slot.

21. The system of claim 20, wherein each of the first packet selection process and the second packet selection process comprises two or more subprocesses executed to select the first packet and the second packet respectively.
22. The system of claim 21, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed in one time slot.
23. The system of claim 22, wherein each of the two or more subprocesses in the first packet selection process and in the second packet selection process is executed at a different level of the scheduling hierarchy.

24. The system of claim 21, wherein at least one of the subprocesses in the first packet selection process is different from the subprocesses in the second packet selection process.
25. The system of claim 21, wherein when a subprocess is selected by the first packet selection process, it is locked and cannot be selected by the second packet selection process.
26. The system of claim 25, wherein the subprocess is selected from one or more subprocesses at a same level of the scheduling hierarchy by sorting the one or more subprocesses at that level based on a selection criteria.
27. The system of claim 26, wherein the selection criteria is one selected in a group comprising an arrival time and a contracted rate.